Elk Hoof Disease
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When considering carefully conducted research, we often imagine the scientist with a studious appearance, pursuing the resolution to the question that spurred her experiments. We think of the instruments she uses to collect samples, the detailed lab reports recording observations, and the excited anticipation of eureka moments. However, in this reflection, we usually focus so much on what is occurring and why it is occurring that it becomes easy to overlook where it is occurring.

Conducting meaningful research requires a setting designed with forethought and intention in order to promote the success of the research. When that research involves working with large, wild animals and potentially infectious diseases, the importance of having a place capable of meeting the challenges of the project increases. For these reasons, Dr. Margaret Wild and her team constructed a research facility, completed in January 2020, that allows them to conduct controlled experiments without sacrificing the safety of the researchers, the local environment, or the elk. Funding for the facility was provided by the State of Washington and supported with a generous donation by the Rocky Mountain Elk Foundation. Following a delay due to the COVID-19 pandemic, research started in earnest at the facility in October 2020.

Located in a quiet place on the WSU campus, the facility consists of several separately fenced holding pastures and a main building with individual stalls where studies are conducted. The entire facility is surrounded by a secondary perimeter fence. An aisle wide enough for one elk runs the length of the main building, beginning with one of the holding pastures and ending with a round handling tub and squeeze chute. Ten 16x24 foot stalls with tall wooden walls line the aisle of the main building. Stalls are accessible via a pivoting door that can swing into the stall or into the aisle depending on the direction elk need to be moved.

These descriptions may appear ordinary, but the simplicity of the floorplan is actually its strength. When the doors swing into the aisle, they act as natural barriers, blocking the path back to the pasture and funneling the elk towards the round handling tub. The round handling tub, like a revolving door, then turns the elk so they can go back to their stall after first passing through the squeeze chute where physical exams can be done safely. The simplicity of the floorplan enables elk
to move through the facility with fluidity, reducing the stress placed on the animal and decreasing the risk of harm to them and the researchers.

With initial experiments focusing on the infectious nature of the disease, biosecurity is another significant concern. As researchers, this concern stems from a desire to keep experiments as controlled as possible, limiting the number of variables by restricting outside influence. Furthermore, from an animal health perspective, this disease needs to be studied without the potential of it spreading to more herds than it already affects. Achieving biosecurity relies heavily on the work practices of the researchers and caretakers, but many of the facility’s features help reinforce that effort. Each stall has a concrete foundation and concrete lower walls to eliminate the spread of contaminants from one stall to the next. Similarly, the secondary fence around the perimeter of the facility inhibits Pullman wildlife from introducing infectious agents into the facility as well as containing elk if they break out of their stall. Lastly, Dr. Wild’s team consulted with WSU’s Laboratory Safety Program to establish protocols for sanitary disposal of waste in the facility and water runoff. Having a bio-secure space enhances the ability to conduct controlled and meaningful research, while also addressing the responsibilities of working with potentially infectious diseases.

However, to say this facility exists solely as a place for research would be severely mistaken; it must also serve as a place where elk reside. Although adaptable and opportunistic, elk remain wild animals, so the facility must reflect the needs of wild animals. Courtesy screens surround the facility to minimize unwanted visual stimulation to the elk. Public access is restricted to reduce stressors as well as to prevent the introduction of outside diseases. The main herd has access to two large pastures where they can graze and gather undisturbed. At least twice a day, researchers observe the elk in the pastures before attending to elk in stalls that are participating in studies. They assess their general health, attitude, gait, and other indicators of wellbeing. In as many ways as possible—from how the elk move through the facility to how the researchers interact with them—the facility is a world of routine, where the elk learn what to expect and when to expect it. A regular schedule with consistent interactions offers the elk a sense of security in a place they grow accustomed to. Although this facility was built with experiments in mind, conducting research cannot compromise the quality of life awarded to the elk, something Dr. Wild and her team have focused greatly on.